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the density of nitrogen taken from other sources of that gas. The new and unknown substance was isolated by subjecting nitrogen taken from the air to the action of magnesium. The magnesium absorbed the nitrogen and left a residual gas whose density was nearly 50 per cent. greater than that of nitrogen. The newly discovered substance seems to constitute about 1 per cent., by weight, of the atmosphere. It gives a spectrum consisting of a single line in the blue.

The investigators have not made the details of their work public, but it is announced that they will present them at a meeting of the Royal Society in the near future. W. W. C.

ON PHOTOGRAPHING THE SOLAR CORONA WITHOUT AN ECLIPSE.

The importance of obtaining an accurate knowledge of the constitution and physical condition of the solar corona is very great. Our present knowledge on that subject is extremely meagre, and is advancing at an exasperatingly slow rate. We are able to observe the corona only during the moments of total eclipses, and the most persistent eclipse observer cannot expect more than one hour for such observations in his whole lifetime. To remedy this misfortune, many commendable attempts have been made to see and to photograph the corona without the aid of an eclipse. Professor GEO. E. HALE, Director of the YERKES Observatory, has an interesting paper giving the history of these attempts in the October *Astronomy and Astro-Physics*. Unfortunately he had only failures to chronicle. The most recent trials were those made by Professor HALE on Pike's Peak in 1893, and Mount Etna in 1894. In conclusion, he writes: "While it can hardly be said that the results of my various attempts to photograph the corona without an eclipse have been at all encouraging, I have by no means abandoned hope that the method, if fairly tried under good conditions, may yet be successful. In choosing a site great care should be taken. On Pike's Peak the dust was very troublesome. * * * There was much more dust on Etna than on the Peak. * * * A snow-covered peak might offer important advantages in this and other particulars." W. W. C.

PRIZE FOR EXCELLENCE IN COMET OBSERVATIONS.

Early in 1893 *The Astronomical Journal* offered a special prize of $200 to the observer, a resident of the United States, who should make the best series of observations for determining the positions of comets between 1893, March 31, and 1894, September 30. The award has recently been made to Professor J. G. PORTER, of the Observatory of Cincinnati. The judges were Professor ASAPH HALL of Washington, Professor LEWIS BOSS of the DUDLEY Observatory at Albany, and Dr. S. C. CHANDLER of Boston. W. W. C.

THE DISCOVERY OF ASTEROIDS IN 1894.

Twenty-four asteroids were discovered in 1894: twelve by CHARLOIS of Nice, six by WOLF of Heidelberg, two by COURTY of Bordeaux, one by BIGOURDAN of Paris, one by BORRELLY of Marseilles, one by WILSON of Northfield, Minn., and one by ROBERTS of England. The number of asteroids now known is just about four hundred. W. W. C.

THE COMETS DISCOVERED IN 1894.

Five comets were discovered in the year just past.

Comet *a* 1894 was discovered by DENNING at Bristol, England, March 26. It was a faint telescopic comet, moving in an elliptic orbit around the Sun once in about seven years. It is thus a newly discovered member of the solar system.

The most interesting comet of the year was Comet *b*, discovered by GALE, at Sydney, Australia, on April 3. At its brightest it was of the 5th magnitude and therefore easily visible by naked eye. For a few days an extremely faint tail was just visible by telescopic assistance, but a tail of considerable length was shown on the photographs obtained by BARNARD at LICK Observatory, RUSSELL at Sydney, and WOLF of Heidelberg. The comet was moving in a parabolic orbit. The spectrum of this comet, consisting of about twenty-five bright lines, was identical in every respect with that of Comet *b* 1893. Its principal constituents were therefore carbon and cyanogen.

Comet *c* 1894 was TEMPEL'S periodic comet, re-discovered on May 8 by FINLAY, at the Cape of Good Hope.

Comet *d* 1894 was ENCKE'S periodic comet, re-discovered by CERULLI, at Teramo, on November 1.